

Designing Performance Condition Indicators of Gynecology and Obstetrics Ward, 2014

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Abstract: *Introduction:* Evaluation is defined as the process of determining success degree in achieving predetermined goals and its goal is to provide information relating to effectiveness, efficiency and quality of health and therapeutic care to optimize results. This study was aimed to Designing performance condition indicators of gynecology and obstetrics ward, 2014. *Research method:* The present study was applied in terms of the goals of the study and was conducted using cross-sectional method in 2014. The required information for designing performance condition indicator of gynecology and obstetrics ward was gathered based on library studies and review of literature using views of the related experts and specialists and questionnaires. In this research, Delphi method was used to determine performance indicators. The required indicators for designing Delphi questionnaire were obtained by performing three phases of 1- review of literature, 2- performing interview and receiving views of experts (obstetricians and gynecologists, validation experts, authorities in gynecology and obstetrics ward) and 3- interview with patients. After performing three Delphi rounds, performance indicators were determined. Results revealed that in. *Results:* obtained that indicators such as Manpower (Ratio of obstetricians and gynecologists to inpatient bed, Patient per capita for nurse etc), Facilities (Ratio of fetal monitoring device to childbirth bed, Portable suction device in labor room etc), Safety, Hospitals infections, Satisfaction etc were developed. In *Conclusion:* Hospital indicators showed the performance of hospitals in the various bases. Therefore, the broad attentions to these indicators are necessary. focus Hospital managers and administrators Managers focus on indicators obtained in Gynecology and Obstetrics ward can improve the performance of ward.

Key words: Gynecology and obstetrics ward • Performance indicators

INTRODUCTION

Undoubtedly, success of each plan depends on the presence of an efficient and adequate evaluation and supervision system to protect health of the activities of a plan and direct it forward [1]. Organizations have tried to utilize validation instruments in evaluation and assess performance of organizations based on definite goals at the end of each plan and in a time interval to specify access to them, judge about weaknesses and strengths

and success or failure factors and utilize the results for planning to remove deficiencies and reinforce and develop organizations [2].

According to the reports of World Health Organization (WHO), share of organizations out of the current expenses of government in health section is between 50 and 80%, while share of hospital expenses out of health and therapy in governmental section does not exceed 40% in developed countries [3]. Therefore, performance of evaluation and execution of the obtained

results can be highly important. Lack of evaluation in therapeutic institutes leads to increased therapeutic expenses; in addition, negligence in the provision of primary health care intensively endangers health of society, while its provision will result in full productivity of therapeutic institutes with suitable cost at the same time with guaranteeing health [4].

Today, information systems act as sensory members of management in organizations and centers and help organizations draw the present view and strategic perspective. Therefore, a suitable information system can give necessary evidence for decision making and performance of management in organizations. Thus, all technical and managerial characteristics and components of services should be determined. Generally, this work is the most important part of hospital service evaluation [5]. Karter and Cahill conducted a research entitled *Developing performance evaluation indicators in James Hospital of Ireland* and, using the comparative study of 8 hospitals in some countries, concluded that there should be performance indicators for evaluating performance in each hospital and performance evaluation system could considerably help improve the performance and productivity of hospitals in the presence of performance indicators [6].

One of the cases which is important in the field of health is health of pregnant mothers. Mothers' health is regarded as not only a health indicator, but also one of the indicators of development and one of the main components of primary health care (PHC) [7]. It is known that hospital ward of gynecology and obstetrics as one of the main sections of general hospitals is the only ward, from which life of human starts and in which mother and fetal health is important. Designing indicators and evaluation of this ward by these indicators will be informative in terms of its performance; certainly, high performance of this ward is very effective in the performance of hospital and attitude of patients toward it. As a result, we decided to select this ward for performance evaluation by designing indicators.

MATERIALS AND METHODS

The present study was applied in terms of goals and was conducted using cross-sectional method in 2014. The required information for designing performance indicators of gynecology and obstetrics ward was gathered based on library studies and review of literature, use of views of the related experts and specialists and questionnaires. In this research, Delphi method was

applied to determine performance indicators. The required indicators for designing Delphi questionnaire were obtained by performing three phases of 1- review of literature, 2- performing interview and receiving views of the experts (obstetricians and gynecologists, validation experts, authorities of gynecology and obstetrics ward) and 3- interview with patients. After performing three Delphi rounds, performance indicators were determined. In the first phase, indicators were searched by library studies and journals and according to key words such as gynecology and obstetrics ward, performance indicator, analytical hierarchy process in different websites such as Iranmedex, Irandoc, SID, Magiran, DID and Civilica. In the second phase, the indicators obtained from review of literature were classified as a questionnaire in three input, output and process parts and given to 5 obstetricians and gynecologists as faculty members of Yazd University of Medical Sciences, 8 authorities of gynecology and obstetrics ward and 7 validation experts of Yazd hospitals who were selected using convenience sampling method. The structural factors included goals of the ward, physical facilities, personnel, equipment, medicine and tools. Process factors included executive, therapeutic and clinical procedures, safety, reception and discharge. Output factors were improved patients, deceased patients and patients with hospital infection. In the third phase, views of 30 patients who were hospitalized in the selected gynecology and obstetrics ward of Yazd city were obtained using convenience sampling method from the intended hospitals with semi-structured questionnaire; this questionnaire contained 10 questions in the fields such as reason for the selection of this hospital ward, weaknesses, strengths and suggestions, etc. To analyze the data obtained from this phase, framework analysis was used. This method was used to analyze the qualitative data of studies in the field of policymaking with 5 phases as follows: familiarizing, identifying a thematic framework, indexing, charting and mapping and interpreting.

At the familiarizing stage, a communicative and content summary was designed for each of the interviews and a primary thematic framework was available based on the past studies in this field. Questions for the guidance of interviews and thematic guidance were designed. This framework was discussed in several sessions with members of the research group (two validation experts and one of the management group members). It was then revised by reviewing interviews and repeating the familiarization stage. Afterward, the researcher indexed the interviews primarily. These codes were revised and corrected by three members of the research group for

many times and were finally discussed for the last time in a session in the presence of all members [8]. Relationship between themes and sub-themes was also identified, analyzed and classified as three input, process and output groups. At the end, share of each one of the input, process and output indicators out of total indicators was drawn on the diagram.

Then, all the indicators obtained from the first to third phases were designed as a questionnaire for performing Delphi and receiving views of obstetricians and gynecologists using 5-point Likert scale (1=I fully agree to 5=I fully disagree) and given to 30 obstetricians and gynecologists (mean number of people required for Delphi method) in Iran by sending questionnaires through email. Delphi was performed in three rounds and means and standard deviations were used in each round to determine uniform confirmation or rejection of the indicators. In the first round, indicators with the mean of more than 4 and standard deviation of less than 1 were confirmed and indicators with mean of less than 2 and standard deviation of more than 1 were rejected. Other indicators were included in the second round of Delphi. In this round, indicators with mean of more than 4 and standard deviation of less than 1 were confirmed and indicators

with mean of less than 2 and standard deviation of more than 1 were rejected. Other remaining indicators were included in the third round of Delphi. In the third round, only items with mean of more than 4 and standard deviation of less than 1 were confirmed and other items were excluded.

After performing Delphi stages, performance indicators of performance of gynecology and obstetrics ward were obtained.

RESULTS

In the first phase of the study (review of literature), 60 papers were investigated, among which 42 cases were complete papers and 18 were abstracts. 45 performance indicators were found to be related to obstetrics and gynecology ward.

Then, these indices were classified as three input, process and output parts and gathered as a questionnaire. In the second phase, they were given to 20 specialists in this field (5 obstetricians and gynecologists, 8 authorities of obstetrics and gynecology ward and 7 validation experts) so that 100% of the specialists were female, 40% were in age group of 36-46 years old and 30% had working

Table 2: Indicators of literature review

Authors	Subject	Indicators
Hossein Jabbari <i>et al.</i> , (2011) (9)	Priority of quality performance indicators in area of the quality effectiveness of public hospitals using Analytical hierarchy process (AHP).	Net mortality rate, hospital infection rate, patient satisfaction
Sajjadi <i>et al.</i> , (2011) (10)	Is there a concurrent method for comparing key performance indicators of hospitals?	Inpatient bed occupancy ratio, bed ratio, average length of stay
Sima Ajami and Saeideh Ketabi (2008) (11)	Medical document section and multivariate decision making	Physical space, manpower
Nematollah Joneidi <i>et al.</i> , (2007) (12)	Comparing performance indicators of one of the hospital of Tehran with national standards	Turnover rate, occupancy ratio, bed ratio, rate of admissions per bed
Amir Ashkan Nasiri Poor (2002 and 2007) (13)	Relationship between establishment of evaluation quality indicators and quality of therapeutic services of patients undergoing surgery in hospitals of Golestan University of Medical Sciences	Cesarean percent, natural childbirth percent
JAKAB M (2002) (14)	The introduction of market forces in the public hospital sector: from new public sector management to organizational reform	Access to medical equipment and facilities, visiting patients for each physician per day, total expense, wage of physicians, treatment percent based on protocols, mortality rate, post-surgery infection rate, waiting time
Lied T.R. (2001) (15)	Small hospitals and performance measurement: implications and strategies	Length of stay, admission rate, mortality of patients, waiting time for admission, selective caesarians, hospitalization, patient
Curtright (2000) (16)	Strategic performance management: development of a performance measurement system at the Mayo Clinic	Patient satisfaction, clinic productivity per working day, number of visiting outpatients for each physician per working day, complaint of patients

Table 3: Some indicators resulting from the experts' views

Indicator grouping	Indicators
Input	Comparing contents of childbirth pack with its standard Number of rooms resistant to fire, earthquake and explosion Ratio of administrative team to bed Ratio of clinical team to bed Ratio of midwife to bed Ratio of midwife to bed
Process	Hours of educational courses for clinical personnel Average length for each physician's visit Time spent on transferring patient from examination room (midwifery emergency) to surgery room On the job training per capita of nursing and midwifery team Ratio of nursing errors (medicinal, falling out of bed) to total hospitalized patients
Output	Number of neonatal death in natural childbirths Number of neonatal death in cesarean childbirths Mortality rate of mothers to total admissions Mortality rate of mothers after gynecological surgery Mortality rate of mothers in natural childbirths Number of real cesarean to total cesarean sections Patient complaint about the ward Personnel complaint

Table 4: Themes and sub-themes of interview with patients for determining indicators of obstetrics and gynecology ward

Themes	Sub-themes
Input	I1: When a number of us needed help, the personnel concurrently took care of us. I2: Rooms were not occupied and the number of beds per room was not high. I3: The room in which I suffered pain was not an interesting one, because there were too many people there. I4: I was only in waiting room of the ward for some minutes; but, I think that good waiting space of this ward is one of its strengths.
Process	P1: It was very good that my infant was beside me. P2: the examinations performed by the midwife in delivery room were very bad. P3: Perhaps, if the physician stayed during natural childbirth, I would not suffer from rupture. P4: After childbirth, I was not very ok. It does not mean that all people were the same as me and when I was transferred to the ward, there was no nurses there. P5: She lifted my bed in order to reduce falling probability. P6: I have not ever seen it in Iran; but, I have noticed that, in other countries, the patient companion accompanies her, which can be desirable. P7: I do not know how long it took for me to go to the reception ward's bed for examination and childbirth; but, I think it was a long time.
Output	O1: Since rupture in childbirth was high, I had to be hospitalized more. O2: I really felt comfortable due to the behavior of the highest-ranking person in the ward like the ward authority to the lowest one such as servant. O3: The personnel dealt with my affairs very late and their response was very late. O4: Hospital is the place in which people have their own problems and it is very bad that the personnel are bad-tempered and behave harshly. O5: Since I have participated in the pre-childbirth classes, I was undisturbed during childbirth; after the childbirth, I had less stress.

Table 5: Condition of indicators in three rounds of Delphi

Delphi rounds	Confirmed indicators	Excluded indicators	Indicators entering the next round
First round	14	12	82
Second round	10	12	60
Third round	7	Remaining indicators were excluded.	

Table 6: Performance indicators of gynecology and obstetrics ward

Performance indicators of gynecology and obstetrics ward	The first round	Indicators
		<ol style="list-style-type: none"> 1. Ratio of obstetricians and gynecologists to inpatient bed 2. Patient per capita for nurse 3. Average bed for each pain room 4. Ratio of fetal monitoring device to childbirth bed 5. Standard contents of childbirth pack 6. Presence of fence for all beds of the ward 7. Access to emergency trolley drugs in preeclampsia 8. Percent of observing breastfeeding instruction 9. Use of non-medicinal methods of pain alleviation 10. Patient satisfaction 11. Hospital infection 12. Neonatal death to total labor 13. Ratio of caesarian to total labor 14. Holding labor preparedness classes
	The second round	<ol style="list-style-type: none"> 1. Ratio of midwife to the patient entering labor 2. Ratio of midwife to the patient who is in recovery after labor 3. Ratio of midwife to the patient who suffers from medical or midwifery complications 4. Mean record of management in the ward 5. Bed occupancy ratio 6. Number of postpartum beds for each labor bed 7. Percent of observing rooming in instruction 8. Average time of hospitalization for natural labor 9. Use of medicinal methods of pain alleviation 10. Presence of registration form or reporting system of medical errors
	The three round	<ol style="list-style-type: none"> 1. Personnel satisfaction 2. Ratio of midwife to the patient who is in caesarian section 3. Oxygen output and central suction for each bed 4. Portable suction device in labor room 5. Number of hygienic service for each pain room 6. Average bed for each ward room 7. Average time of hospitalization for cesarean section

experience of 25-30 years. Then, they were asked to mention if an indicator should be added and, then, 47 indicators were added. In Table 3, some of these indicators are mentioned.

At the third stage, an interview was conducted with 30 patients from the selected hospitals of Yazd who were being discharged and stayed in the hospital at least for one day. Most of these patients were in the age group of 20-25 years old and 60% had Associate degrees or above. The interview questions were designed and data were analyzed using the framework analysis method in 5 steps [17]. In the first step, the primary framework of questionnaire (the reason for selecting obstetrics and gynecology ward of this hospital, weaknesses and strengths, suggestions for improvement,

etc.) was designed based on the previous studies. In the second step, interview with the research group was discussed for several times and the questions considered by them were added and the questions were finally confirmed. Response of the interviewees was implemented and then prepared as codes [18]. The indicators were divided into the themes and sub-themes as input, process and output indicators and drawn according to Table 4. In the fifth step, the number of each one of the input, process and output indicators was drawn on a diagram and other 16 indicators were added to this section.

Finally, 14 indicators were confirmed in the first round, 10 indicators were confirmed in the second round and 8 indicators were confirmed in the third round.

And finally, Performance indicators of gynecology and obstetrics ward according to Table 6 were showed.

DISCUSSION AND CONCLUSION

Evaluation process of health field is more important than other fields due to the sensitivity of duty and special characteristics. For example, necessity of the presence of a monitoring and evaluation mechanism is more evident than that of other fields due to the vulnerability of relationship between clients and service providers and difference of their knowledge level [1].

An important argument has been made that effective strategies to implement quality indicators in daily practice in order to improve hospital care do exist [19].

In this research, attempts were made to determine performance indicators using views of specialists about obstetrics and gynecology ward to study condition of this ward.

Based on the results of the present study, performance indicators of gynecology and obstetrics ward, In General areas such as; Manpower, Facilities, Bed function, Clinical services, Safety, Therapeutic results And Satisfaction etc were developed.

The main goal of any organization is to achieve productivity. Several factors affect rate of productivity of organizations and, in a general conclusion, dominant role of human factor can be pointed out among others [20].

Sima Ajami (2008) reported that Factors affecting the performance of Medical document section include Manpower, Facilities, Satisfaction [11]. Gallagher and Rowell [20] and Brooten [21], Hospital infections, damage to the patient and nurse satisfaction as an indicator of quality evaluation stated.

Basu *et al.* [22] found that the rate of hospital infections as Therapeutic results, is an important issue in determining the quality of hospital care.

Nowadays cesarean rate in Iran has been exceeding from recommended rate by World Health Organization (WHO) [23]. Studies have shown that the risk of maternal death in the UK from a cesarean delivery is three times higher than vaginal delivery [24].

Patient satisfaction is a concept, which is receiving increasing attention in medical care [25]. Curtright [16] patient satisfaction as one of the effective measures of clinical performance management system was outlined. In this research, some obstetricians and gynecologists did not have the required cooperation in responding emails for completing the questionnaire; we removed this limitation due to use of three Delphi rounds for several times of emailing.

Finally, last performance of the ward can be measured by measuring indicators. Strengths and weaknesses can be identified and planning can be made for improving and reinforcing these factors in the ward. Finally, general performance of an organization results from performance of all of its units. Therefore, any ward should have Evaluation Indicators to be able to achieve good performance in organizations.

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